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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,148	02/28/2002	Tatsuya Ohguro	220199US2S	4941
22850	7590	02/09/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			FARAHANI, DANA	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 02/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/084,148

Applicant(s)

OHGURO, TATSUYA

Examiner

Dana Farahani

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-7,10-13 and 15-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-19 is/are allowed.
- 6) ☒ Claim(s) 1,4-7,10-13,15 and 22 is/are rejected.
- 7) ☒ Claim(s) 20,21 and 23-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4-6, 13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nowak et al., hereinafter Nowak (US Patent 6,191,451), newly cited.

Regarding claims 1, 4, and 22, a semiconductor device comprising a semiconductor substrate 150; a first conductivity type well area 130 formed in a surface area of the semiconductor substrate; a plurality of element isolation areas 20 formed in the well area; a second conductivity type semiconductor layer 136 formed at a first area of the well area which is isolated by the element isolation areas, the second conductivity type semiconductor layer configuring a first electrode of a capacitor; a first conductivity type semiconductor layer 138 formed in a second area of the well area which is isolated by the element isolation areas, the first conductivity type semiconductor layer configuring: a second electrode of the capacitor; and a first conductivity type low resistance area 140 provided at a base portion of the well area, the low resistance area having a resistive value lower than that of the well area, wherein the low resistance area is not in contact with a depletion layer of a junction portion between the second conductivity type semiconductor layer and the well area, and is not in contact with a depletion layer of a junction portion between the first conductivity type semiconductor

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layer and the well area. Although, Nowak does not disclose the well is in contact with the element isolation areas, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the length of the isolation regions, since such a modification would have involved a mere change in size. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Regarding claims 5 and 6, Nowak renders obvious the claimed invention except for the impurity concentration of the low resistance area. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include these values, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 13, note that Nowak discloses the limitation in the claim, as discussed above, further disclosing a second well area 134; a second conductivity type base layer 142 of a bipolar transistor (comprising regions 134 and 144, 130 and 142, 132 and 136) formed on the first well; and a first conductivity type second electrode 136 on the base layer.

3. Claims 7, 10-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nowak as applied to claim 1 above, and further in view of Stolmeijer et al., hereinafter Stolmeijer (U.S. 5,742,090), previously cited.

Regarding claims 7, 10, and 15, Nowak discloses the limitations in the claims, as discussed above, further disclosing a second well 134. Nowak does not disclose a MOS transistor.

Stolmeijer discloses in figure 5 a MOS transistor 20 in an integrated circuit. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a MOS transistor in Nowak's structure in order to make an integrated circuit application which employs both capacitors and MOS transistors (note that in claim 15 a first conductivity type semiconductor layer is one of a source/drain regions of the transistor).

Regarding claims 11 and 12, Nowak in view Stolmeijer renders obvious the claimed invention except for the impurity concentration of the low resistance area. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include these values, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Allowable Subject Matter

4. Claims 16-19 are allowed.
5. The following is a statement of reasons for the indication of allowable subject matter:

The reason for indication of allowability of claims 16-19 is inclusion therein of the limitations that of the circuitry stated in those claims.

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6. Claims 20, 21, and 23-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the primary reason for indication of allowability of claims 20, 21, and 23-25 is inclusion therein of the limitations of the third layer and the second low resistance areas.

Response to Arguments

8. Applicant's arguments with respect to the previously rejected claims have been considered but are moot in view of the new grounds of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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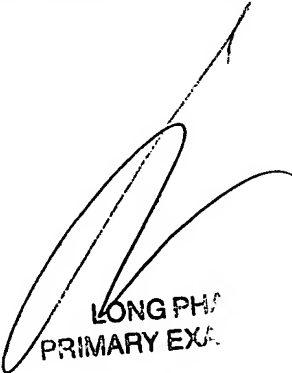
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dana Farahani whose telephone number is (571)272-1706. The examiner can normally be reached on M-F 9:00AM - 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M Fahmy can be reached on (571)272-1705. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

D. Farahani



LONG PH
PRIMARY EX.